To: ORD-NCEA[ORDNCEA@epa.gov]
Cc: ORD-Exec-Council-Directors[Execcouncildirectors@epa.gov]; ORD-Mgmt-Council[ORDMgmtCouncil@epa.gov]; ORD-IOAA-Front Office Support[ORDIOAASUPPORT@epa.gov]
From: Bahadori, Tina
Sent: Tue 10/10/2017 11:16:47 AM
Subject: NCEA's Closeout of FY17 -- Congratulations and THANK YOU!

Dear NCEA Colleagues,

We brought Fiscal Year 2017 to close with true grit, full dedication, and unyielding determination – thank you!!! These first 10 months with you have been inspiring and humbling.

NCEA plays a vital role in protecting and improving human and environmental health. Its research and products are used by states, local communities, tribes, international organizations, and offices across the EPA. The wide range of our products and world class expertise have made NCEA the recognized global leader in assessment science.

As I prepared to report NCEA's FY17 organizational accomplishments, the breadth, depth, and impact of these accomplishments astounded me – they highlight the crucial role of NCEA at the interface of research and decision making. Borrowing from the language of the clinical community, I would say that NCEA provides the Bench to Policy Translation of science that is foundational to EPA's mission.

NCEA's accomplishments are possible due to the combined efforts of dedicated scientists, administrative staff, and the management team. They have benefited from ongoing LEAN activities, implementation of Project/Program Management, and commitment to game-changing innovation across NCEA. In FY17, we began to integrate across our assessment products – human and ecological; to adopt/implement the Portfolio approach; and to pragmatically operationalize Systematic Review.

So thanks for all the ways in which each of you has contributed. We begin FY18 with even greater zest and tenacity – the relocation of our PY offices to Washington, DC, and the Reagan Building is equally symbolic of our visible commitment to engage with partners across EPA, the federal family, and the states, to support and advance science based decision making.

I abstracted a small subset of our FY17 accomplishments below -- please take a look and join me in celebrating NCEA's success.

Tina

Expert-driven Scientific and Technical Support for EPA

Drawing upon the diverse expertise of its scientists, NCEA provides extensive scientific and technical support to EPA. A critical hire in FY2017 was the Assistant Center Director for

Scientific Support dedicated to engaging EPA program and regional offices and states, with the goal to improve NCEA's ability to be responsive to dynamic needs. To develop measures that evaluate this support, NCEA conducted a pilot of TechTracker in early 2017. During this pilot, using TechTracker, NCEA demonstrated that a subset of participating NCEA scientists received 68 requests and provided 639 hours of support during just a one-month period. The needs of EPA programs and regions has continued to grow during FY 2017, drawing increasingly on NCEA's scientific and technical resources; some highlights are provided below.

- Directly supported OCSPP's TSCA efforts by: a) detailing a number of NCEA assessment scientists to OCSPP, providing expertise for chemical risk evaluation teams; b) providing significant training and guidance to OCSPP in implementing systematic review techniques; c) tailoring and supporting the use of HERO for TSCA assessments; and d) providing toxicology discipline expertise to risk evaluation teams.
- Provided intensive emergency support to Texas and Region 6 over a short period of time, responding to public health concerns and determining a toxicity reference value for a contaminant released to drinking water system in Corpus Christie in December 2016.
- Provided extensive scientific support to Louisiana and Region 6 in communicating hazard characterization for risk communication for a community in Louisiana related to air emissions of chloroprene.
- Supported Region 7 through the Superfund Technical Support Center, evaluating links between environmental lead concentrations and child blood lead levels to evaluate effectiveness of soil remediation and other interventions.
- Scientific support to OW in development and use of a Biologically Based Dose Response model to derive dose-response information supporting the approach for Maximum Contaminant Level Goal for perchlorate in drinking water

Providing the Scientific Foundation for Review of the National Ambient Air Quality Standards (NAAQS)

Two draft Integrated Science Assessments (ISAs) were released -- the First Draft ISA for Oxides of Nitrogen, Oxides of Sulfur, and Particulate Matter-Ecological Criteria and the Second Draft ISA for Sulfur Oxides-Health Criteria. In addition, NCEA scientists have provided technical support on the Response to Comments Document and Final Rule for the primary and secondary NAAQS for Lead, the Policy Assessment for the primary NAAQS for Oxides of Nitrogen, and the Risk and Exposure Planning Document for the primary NAAQS for Oxides of Sulfur. This scientific support ensures that EPA decisions in the NAAQS reviews are based on the best available scientific information.

Public Release of Final Integrated Risk Information System (IRIS) Assessments for Benzo[a]pyrene and Ethylene Oxide

Two final IRIS assessments were released and posted to the public IRIS database; the IRIS Toxicological Review of Ethylene Oxide and IRIS Toxicological Review of Benzo[a]pyrene. These two final assessments implement many of the recommendations provided by the National

Academy of Sciences and feature a new streamlined document structure that is more transparent with respect to the methods used and better articulates how decisions were made. These IRIS assessments will be used by EPA's program and regional offices to inform decisions to protect human health.

Supporting Superfund with Release of Provisional Peer Reviewed Toxicity Values (PPRTVs)

PPRTV assessments for 12 chemicals of priority to the Superfund Program, including n-heptanal, p-chlorobenzene sulfonic acid, and 2,2-difluoropropane, were delivered to the Office of Land and Emergency Management (OLEM). PPRTV assessments are developed to support informed decisions in the Superfund Program and at hazardous waste sites when toxicity values are not available in the Integrated Risk Information System (IRIS) database. Several of these assessments use a read-across approach to provide quantitative assessment for data-poor chemicals.

Technical Support for Superfund and Other Program Offices

NCEA responded to 23 requests from the Regions and OLEM scientists through the Superfund Health Risk Technical Support Center (STSC). Examples of requests in FY17 include: evaluation of alternative interpretations of the health database for cobalt compared to the 2008 PPRTV for Cobalt, technical review of evidence regarding the carcinogenic mode of action for toxaphene for Region 4, evaluation of linked environmental and child blood lead levels and effectiveness of soil remediation and other interventions for Region 7. The STSC acts as an Agency resource that responds to requests by providing scientific/technical consultations and support that serve to guide clean-up criteria and management.

Supporting Office of Water for Advancing Rapid Causal Assessment Methods

Streams in poor ecological condition often require causal assessment to determine the reason for undesirable effects and the appropriate actions for improving conditions. However, site-specific causal assessments can be time consuming. EPA collaborated with California to streamline a key component of the process: identifying a group of ecologically similar (comparator) sites that are used to compare and contrast biological condition and stressor exposure at the site of interest. This advancement can help other state biological assessment programs make their causal assessments rapid and routine, leading to management actions that effectively improve stream conditions.

Agency-Wide Guidance on Weight of Evidence in Ecological Assessment

Agency-wide guidance was provided that will improve consistency and transparency of the logic used to weigh evidence in ecological assessments. Collectively, these documents provide consistent methods for weighing ecological evidence using a standard framework consisting of three steps: assemble evidence, weight evidence and weigh the body of evidence. Use of the framework will increase the consistency and rigor of weight of evidence practices, provide greater transparency than ad hoc and narrative-based approaches, and introduces the Agency's

approach to an international audience.

Supporting Office of Water for Developing Aquatic Life Criteria for Specific Conductivity

The EPA draft report, *Field□Based Methods for Developing Aquatic Life Criteria for Specific Conductivity*, and accompanying seven journal articles provide flexible approaches for developing science-based conductivity criteria for flowing waters that reflect ecoregional- or state-specific factors. Elevated water salinity, as measured by conductivity, has been shown to negatively affect aquatic life in freshwaters. Elevated conductivity is associated with multiple sources, including discharge from wastewater treatment facilities, surface mining, oil and gas exploration, runoff from urban areas, and discharge of agricultural irrigation return waters. Once final, states and authorized tribes located in any region of the country may use the methods to develop field-based conductivity criteria for flowing waters.

Supporting Office of Water for the Revision of US EPA's 1985 Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Life

The EPA's 1985 Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses (U.S. EPA 1985) establishes the basis for EPA's deriving national AWQC for the protection of aquatic ecosystems under the Clean Water Act. The two scoping documents here address 1) how microcosms, mesocosms, field experiments, field studies, and field surveys provide opportunities to determine how multispecies systems respond to chemical exposures and 2) how the analysis of weight of evidence, uncertainty and variability might be incorporated. EPA is considering these approaches for inclusion in the new Guidelines as methods for developing AWQC and/or as supporting information in problem formulation.

Science Synthesis for Nutrient Assessment and Management

Two efforts addressed the issue that despite recognition of nutrient enrichment and eutrophication as problems, rigorous synthesis of scientific evidence is still needed to inform nutrient-related management decisions and policies, particularly for streams and rivers. The first effort addressed nutrient stressor-response relationships that are complicated by multiple interacting stressors and environmental factors, complex and indirect causal pathways involving diverse biotic assemblages and food web compartments, legacy nutrient sources, and the naturally high spatiotemporal variability of streams. The second effort solved the critical problem of diatom taxonomic inconsistency in EPA's National Aquatic Resource Surveys. Results of this work will inform OW's indicator development and applications to better assess the biological and nutrient conditions of the Nation's waters.

Report on the Environment (ROE): FY 2017 Indicator Updates and International Coordination

The ROE presents the best available indicators of national environmental and health status and trends. In FY16 and 17, 31 indicators from all five theme areas (Air, Water, Land, Human

Exposure and Health, and Ecological Condition) were updated and new indicators of dietary pesticide exposure were initiated with EPA's Office of Pesticide Programs. In addition, the ROE team met with leaders of the European Environment Agency's State of the Environment Report (SOER) programs to learn how the two programs are addressing current and emerging challenges such as improving outreach, increasing consideration of previously unexploited sources of data (e.g., citizen science data), and increasing knowledge of how data generated by these programs are being used.

Causal Analysis/Diagnosis Decision Information System (CADDIS): Updated Tools and Site Refresh

Since its release in 2010, the CADDIS website has become a widely-used resource for assessing the causes of degraded ecological condition in streams and rivers. In FY17, several enhancements were made which will enhance the utility and ensure the availability of the resources on CADDIS for scientists and engineers in the Regions, States and Tribes.

Supporting EPA, States and Local Communities to Manage Change: Scenarios of Future Environmental Drivers

Population, land-use change, sea level rise and climate change are major drivers of global environmental change. In collaboration with scientists from across the federal government, EPA scientists worked to develop a coordinated set of scenario products for climate, sea level risk, population and land use to support assessments and adaptation decision-making. EPA scientists developed guidance and training materials for the use of these scenario products in carrying out tasks such as context-setting, bounding the range of scientifically plausible global change, and synthesizing across diverse scientific literature.

Water Quality and Climate Review – A Compendium of Assessment Products

The *Water Quality and Climate Review* (WQCR) is a compendium of technical literature reviews that address different attributes of water quality; program summaries that identify changes most relevant to EPA water programs; and resource links to related tools, data and case studies to guide assessments. Technical information on what is known about water quality impacts of future environmental conditions allows EPA regional and water offices to better manage the water quality risks of climate change.

Assessing the Interactive Impacts of Climate Change and Nitrogen Deposition on Ecosystems

Climate change and atmospheric deposition, after habitat loss, are two of the most important stressors to terrestrial biodiversity nationally and globally. There are numerous cascading and interacting processes that can have synergistic and antagonistic effects on ecosystems, with often unforeseen consequences that are difficult to predict. This collaborative research effort with US National Park Service, the US Geological Survey, and academic researchers supports the

development of an integrated science assessment for nitrogen and sulfur and increases the ability of OAQPS to evaluate the need for a secondary NAAQS standard.

Tina Bahadori, Sc.D.

Director, National Center for Environmental Assessment (EPA/ORD/NCEA)

National Program Director, Human Health Risk Assessment (EPA/ORD/HHRA)

1200 Pennsylvania Avenue, NW, MC 8601P, Washington, DC 20460

Office: PYS-11622; Phone: 703-347-8600; Email: Bahadori.Tina@epa.gov